# NEHA SUNIL

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## EDUCATION

**CALTECH** | 2015 – 2019

Pasadena, CA | G.P.A. 3.9

- B.S. Mechanical Engineering
  - Depth in Robotics, Breadth in Design, Medical Engineering, and Material Science

COURSES

- ME/CS 133: Robotics, ME 72: Engineering Design Laboratory, ME 50: Experiments & Modeling in Mechanical Engineering, EE/ME 7: Mechatronics, ME 13: Mechanical Prototyping, ME 14: Design & Fabrication
- ME 11: Thermal Science & Fluid Dynamics, ME 12: Mechanics
- Bi 1x: Exploration through Experimentation, Bi 23: Nanorobotics, CNS 100: Intro to Computation and Neural Systems, CNS/Bi 256: Decision Making, MedE 101: Intro to Clinical Physiology and Pathophysiology for Engineers
- Core Courses in Math, Physics, Chemistry, and Computer Science

**THE HARKER SCHOOL** | 2011 – 2015

San Jose, CA | G.P.A. 4.48

## EXPERIENCE

**MECHANICAL ENGINEERING INTERN** | June 2017 – September 2017

Nima Labs | Startup developing portable food allergen sensors

- Redesigned multi-channel version of camera-based consumer device in aluminum for reliability and mitigation of user error
- Created manufacturing drawings and exploded assembly drawings. Worked with vendors and wrote up resource document for internal use

**ENGINEERING INTERN** | June 2016 – September 2016

Nima Labs

- Collaborated with hardware and chemistry teams
- Tested multi-channel version of device and discovered key variables of interest affecting chemistry development and camera readings
- Analyzed capabilities of product's camera

**COMPUTATIONAL GENOMICS INTERN** | June 2014 – August 2014

Stanford University

- Created a tool in R to select RNA guides to create library for a novel genome-editing technique using CRISPRs

## RESEARCH EXPERIENCE

Bi 1x: Exploration through Experimentation | 2016

- Used image processing (through scikit-image in Python), brightfield & fluorescence microscopy, and optogenetics

Harker Labs | 2009 – 2014

- Experienced with ELISA assays, gel electrophoresis, statistical data analysis and visualization, principal component analysis, cell culture

## PROJECTS

ME 72 Competition: RC Car with Gun | 2017

- Designed and fabricated car, specifically responsible for transmission subsystem with spur gears and telescoping driveshaft connected to wheels via universal joints

ME 14 Final Project: Warehouse Product Locator | 2017

- Arduino based device moves across a shelf using a motor and lead screw, recognizes objects based on color, and pushes the selected object using a 3D-printed linear actuator

EE/ME 7 Final Project: Ultrasonic Signal-Seeking Pontoon Boat | 2017

- Steered boat using proportional control with ultrasonic transducers and fans

# SKILLS

## PROGRAMMING

- Java, C, R, Python, Mathematica, MATLAB
- HTML, CSS, VB, D3.js
- Arduino, ROS, OpenCV

## APPLICATIONS

- Solidworks (DFM, Metal part design, Top-down modeling)
- Microsoft Office, Excel (Visual Basic), Google Forms
- Adobe: Photoshop, InDesign
- Final Cut Pro (Video Editor)
- Aurasma (Augmented Reality App)

## ACHIEVEMENTS

- Certified Yoga Instructor with 500+ hours of teaching experience
- 2nd Degree Black Belt in Taekwondo
- Successful Aging Mini-Fellowship: Stanford School of Medicine | 2015
- America Library of Poetry Publication | 2015
- Scholastic Art & Writing Award (Photography) | 2015
- National Scholastic Press Association Journalism Honor Roll | 2015
- Presidential Volunteer Service Award | 2013